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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,266	08/31/2001	Richard L. Coulson	42390P11446	3830

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN  
12400 WILSHIRE BOULEVARD  
SEVENTH FLOOR  
LOS ANGELES, CA 90025-1030

EXAMINER

CHOI, WOO H

ART UNIT PAPER NUMBER

2189

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/945,266

**Applicant(s)**

COULSON, RICHARD L.

**Examiner**

Woo H. Choi

**Art Unit**

2189

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,8,9,11-15,17-21,23-35,37,42-46 and 48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6,8,9,11,32-34,42-46 and 48 is/are allowed.
- 6) ☒ Claim(s) 12,18,23,25,29,31,35 and 37 is/are rejected.
- 7) ☐ Claim(s) 13-15,17,19-21,24,26-28 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 12, 18, 23, 25, 31, 35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Shenk (US Patent No. 4,513,392).

3. With respect to claims 12, 23, 25, and 35, Shenk discloses a memory (figure 2) comprising:

an area to store data (figure 2, 243); and

an area to store metadata for the data (col. 4, lines 6 – 18, the predetermined number of times the data is to be recirculated), the metadata including:

a plurality of usage bits to indicate usage information for data in the memory (recirculation count for the data), a usage bit corresponding to one of a given number of clock periods (each recirculation of data takes a certain number of clock periods, hence the count corresponds to a given number of clock periods), wherein the memory is a destructive read memory (shift register read is a destructive read, hence the need for recirculation to preserve

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data) and wherein a usage bit for data read from the memory is updated during a writeback cycle to write the read data back to the memory (the count is updated while the data is being recirculated or written back to the shift register).

4. With respect to claim 18, Shenk discloses a system comprising:

a magnetic memory device (figure 2, 201, 203);

a destructive read memory (figure 2, 105) to cache data for the magnetic memory device (controller 105 caches data to be written to the disks) and to store metadata for the data (controller 105 stores data recirculation count as discussed above), the metadata including a plurality of usage bits to indicate usage information for data in the memory, a usage bit corresponding to one of a give number of clock period (see rejection of claim 12 above); and

a memory controller to update a usage bit for data read from the memory during a writeback cycle to write the read data back to the memory (see rejection of claim 12 above), the memory controller to de-allocate data using the plurality of usage bits (col. 4, lines 19 – 23, when the count expires, the register is loaded with new data).

5. Claims 23, 25, 31, 35 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Mizuno et al. (US Patent No. 6,285,626, hereinafter “Mizuno”).

6. With respect to claims 23, 25, and 35, Mizuno discloses a method comprising:

storing metadata comprising usage information for data in a memory (figure 1, 110); and

updating usage information (figure 1, 111 valid bit) for data read from the memory during a writeback cycle to write the read data back to the memory (col. 3, lines 41 – 50, old data and its valid bit is evicted/replaced when the old read data is written back to the memory and are no longer used, i.e. usage information is updated).

7. With respect to claim 31 and 37, the memory is destructive read memory (col. 4, lines 41 – 42).

8. Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Garney et al. (US Patent Application Publication No. 2002/0199152, hereinafter “Garney”).

Garney discloses a method comprising:

storing metadata comprising usage information for data in a memory (page 2, paragraph 21, ECC data); and

updating usage information for data read from the memory during a writeback cycle to write the read data back to the memory (figure 4, 402 and 406, when a correctable error occurs in the in the ECC data but not in the protected data, ECC data is corrected, i.e. updated, and written back), wherein the memory is a non-volatile cache memory (page 2, paragraph 24).

***Allowable Subject Matter***

9. Claim 1 – 6, 8, 9, 11, 32 – 34, 42 – 46 and 48 are allowed.

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10. Claim 13 – 15, 17, 19 – 21, 24, 26 – 28 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Woo H. Choi whose telephone number is (571) 272-4179. The examiner can normally be reached on M-F, 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Woo H. Choi  
August 5, 2005